IN THE CLAIMS

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

1. (Currently Amended) A method of determining at least one characteristic of a tire selected from: the three components of a resultant of forces which are exerted by the road on the contact area of a tire, the self-alignment torque generated by the tire, the camber, and the pressure; the method comprising the steps of obtaining at least two measurements of circumferential extension or contraction between at least a pair of fixed points positioned at a same radius and being separated in azimuth in at least one sidewall of the tire, the at least two measurements being made at two predetermined azimuth positions of the tire that are separated in azimuth from the center of the contact area, [[and]] calculating the characteristic from the at least two measurements, and storing the calculated characteristic.

2. (Currently Amended) A method of determining at least one characteristic of a tire selected from: the three components of a resultant of forces which are exerted by the road on the contact area of a tire, the self-alignment torque generated by the tire, the camber, and the pressure; the method comprising the steps of obtaining at least two measurements of circumferential extension or contraction between at least a pair of fixed points positioned at a same radius and being separated in azimuth in each of the sidewalls of the tire, the at least two measurements being made at two predetermined azimuth positions of the tire that are separated in azimuth from the center of the contact

area, [[and]] calculating the characteristic from the at least two measurements, and storing the calculated characteristic,

wherein the circumferential contraction or extension of both of the sidewalls is estimated by measuring the distance between the cords of the carcass ply in the sidewalls.

3. (Currently Amended) A method of determining at least one characteristic of a tire selected from: the three components of a resultant of forces which are exerted by the road on the contact area of a tire, the self-alignment torque generated by the tire, the camber, and the pressure; the method comprising the steps of obtaining at least two measurements of circumferential extension or contraction between at least a pair of fixed points positioned at a same radius and being separated in azimuth in each of the sidewalls of the tire, the at least two measurements being made at two predetermined azimuth positions of the tire that are separated in azimuth from the center of the contact area, [[and]] calculating the characteristic from the at least two measurements, and storing the calculated characteristic,

wherein the circumferential contraction or extension of both of the sidewalls is estimated by measuring the distance between wires forming a sensor which measures a variation in capacitance linked with the distance separating two electrodes.

4. (Previously Presented) The method according to Claim 1, wherein the measurement azimuths are selected to be symmetrical with respect to the azimuth of the center of the contact area (180°+ α and 180°- α), with α not equal to α_0, where α_0 is the azimuth at the entry, of the contact area, V_1^1 and V_2^1 being the values measured at these

azimuths on the first sidewall and V_1^2 and V_2^2 being the values measured at these azimuths on the second sidewall, an estimate of the component Fz is provided by $f_z(a_1V_1^{1+}a_2^1V_2^1+biV_1^2+b_2V_2^2)$, where a_1, a_2, b_1 and b_2 are positive real coefficients and f_z is a monotonic continuous function.

5. (Previously Presented) The method according to Claim 1, wherein the measurement azimuths are selected to be symmetrical with respect to the azimuth of the center of the contact area (180°+ α and 180°- α), with α not equal to α_0, where α_0 is the azimuth at the entry of the contact area, V_1^1 and V_2^1 being the values measured at these azimuths on the first sidewall and V_1^2 and V_2^2 being the values measured at these azimuths on the second sidewall, an estimate of the component Fx is provided by $f_x(c_1V_1^1-C_2V_2^1+d_1V_1^2-d_2V_2^2)$, where c_1, c_2, d_1 and d_2 are positive real coefficients and f_x is a monotonic continuous function.

6. (Previously Presented) The method according to Claim 1, wherein the measurement azimuths are selected to be symmetrical with respect to the azimuth of the center of the contact area (180°+ α and 180° α), with α not equal to α_0, where α_0 is the azimuth at the entry of the contact area, V_1^1 and V_2^1 being the values measured at these azimuths on the first sidewall and V_1^2 and V_2^2 being the values measured at these azimuths on the second sidewall, an estimate of the component Fy of the applied force is provided by $f_y(e_1V_1^1+e_2V_2^1-f_1V_1^2-f_2V_2^2)$, where e_1, e_2, f_1 and f_2 are positive real coefficients and f_y is a monotonic continuous function.

7. (Previously Presented) The method according to Claim 1, wherein the measurement azimuths are selected to be symmetrical with respect to the azimuth of the center of the contact area (180°+ α and 180°- α), with α not equal to α_0, where α_0 is the azimuth at the entry of the contact area, V_1^1 and V_2^1 being the values measured at these azimuths on the first sidewall and V_1^2 and V_2^2 being the values measured at these azimuths on the second sidewall, an estimate of the self-alignment torque N is provided by $f_n(g_1V_1^1-g_2V_2^1-h_1V_1^2+h_2V_2^2)$, where g_1, g_2, h_1 and h_2 are positive real coefficients and f_n is a monotonic continuous function.

8. (Original) The method according to Claim 1, wherein, the camber angle is estimated from a detected difference in load supported by each of the sidewalls on the basis of measurements of circumferential extension or contraction.

9. (Original) The method according to Claim 1, wherein tire pressure is estimated by obtaining measurements of circumferential extension or contraction and determining a contribution due to the pneumatic behavior separate from a contribution due to the structural behavior.

10. (Original) The method according to Claim 1, wherein at least three measurements of circumferential extension or contraction in a single sidewall of the tire are used.

11. (Previously Presented) The method according to Claim 1, wherein the measurement azimuths are selected to be symmetrical with respect to the azimuth of the center of the contact area (180°+ α and 180°- α), with α not equal to α_0, where α_0 is the azimuth at the entry of the contact area, and V_1 and V_2 being the values measured at these

other azimuths, an estimate of Fx is provided by $f_x(r_2V_2-r_1V_1)$, where r_1 and r_2 are positive real coefficients and f_x is a monotonic continuous function.

12. (Previously Presented) The method according to Claim 1, wherein measurements of circumferential extension or contraction are performed for at least three predetermined azimuth positions of the tire, which azimuth positions are defined such that:

a first azimuth position corresponds to one of: the azimuth of the center of the contact area; and the azimuth of a point opposite to the contact area;

a second azimuth position and third azimuth position are symmetrically located with respect to a vertical plane passing through the center of the contact area.

13. (Previously Presented) The method according to Claim 12, wherein the first azimuth position corresponds to the middle of the contact area (azimuth 180°) and V_c is a value measured at the first position azimuth, the second and third azimuth positions are selected to be symmetrical with respect to the azimuth of the center of the contact area (180°+ α and 180°- α), with α not equal to α_0, where α_0 is the azimuth at the entry of the contact area, and V_1 and V_2 are values measured at the second and third azimuth positions, respectively, and an estimate of Fz is provided by $f_z(s_cV_c-(s_1V_1+s_2V_2))$, where s_1, s_2 and s_c are positive real coefficients and f_z is a monotonic continuous function.

14. (Previously Presented) The method according to Claim 12, in which, the first azimuth position corresponds to the middle of the contact area (azimuth 180°) and V_c being the value measured at the first azimuth position, the second and third azimuth positions being selected symmetrically with respect to the azimuth of the center of the contact area (180°+ α and 180°- α), with α not equal to α_0, where α_0 is the azimuth at the

entry of the contact area, and V_1 and V_2 being the values measured at the second and third azimuth positions, respectively, an estimate of Fy is provided by $f_y(u_cV_c+u_1V_1+u_2V_2)$, where u_1, u_2 and u_c, are positive real coefficients and f_y is a monotonic continuous function.

15. (Currently Amended) A method of determining at least one selected characteristic of a tire selected from: the three components of a resultant of forces which are exerted by the road on the contact area of a tire, the self-alignment torque generated by the tire, the camber, and the pressure, comprising the following steps:

determining measurement azimuths and collecting values of circumferential extension of at least one sidewall during varied stresses on the tire which stresses are selected to span a full range in which evaluation of the at least one selected characteristic will be permitted in normal use, the selected stresses giving rise to all the couplings liable to be encountered during normal use,

obtaining values of circumferential extension with a first measurement means and values of the at least one selected characteristic associated with circumferential extension with a second measurement means in order to form a training base,

determining coefficients of a transfer function to establish a link between the values of circumferential extension and the values of the at least one selected characteristic using the training base, [[and,]]

testing the transfer functions by comparing estimates of the at least one selected characteristic obtained by the transfer function with the values obtained by a direct measurement means, and

storing the values of the at least one selected characteristic.

16. (Original) The method of determination according to Claim 15, wherein the transfer function is a network having one layer of hidden neurons and one layer of output neurons.